

## **RADAR MONITORING SYSTEM FOR TIRES AND WHEELS**

### **ABSTRACT OF THE DISCLOSURE**

5        A non-contact radar sensor detects tire abnormalities such as tread delamination, sidewall ballooning, embedded nails, and impending flat or hazardous tires. The sensor also detects tire and wheel geometry errors such as out-of-round and run-out. Wheel rotational rate can be sensed for use as a speedometer or for detection of wheel lockup during braking, particularly for large trucks, or for detection of wheel slip in four-wheel drive and racing vehicles. Information  
10      from the radar sensor may be used to alert the driver or to control an antilock braking system or a traction control system. The radar sensor is preferably a range-gated 24GHz pulse Doppler radar with spread spectrum emissions to permit four or more to operate on a single vehicle in an environment crowded with similar sensors.